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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/505,261

08/20/2004

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3928

1444 7590 12/10/2007
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EXAMINER

CHAN, CEDRIC A

ART UNIT

PAPER NUMBER

4151

MAIL DATE

DELIVERY MODE

12/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/505,261	Applicant(s) ABOU-SALEH ET AL.	
	Examiner Cedric Chan	Art Unit 4151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☒ Claim(s) 2-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/20/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 2-9 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 2-9 recite additional functional limitations without providing additional structural limitations necessary for performing these limitations.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 1-17** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is insufficient antecedent basis for the limitation "the 'zero' position" in line 7 of claim 5. There is insufficient antecedent basis for the limitation "the pipette" in line 4 of claim 8. There is insufficient antecedent basis for the limitation "the rinsing well" in line 4 of claim 8. There is insufficient antecedent basis for the limitation "the zero level" in claim 9. There is insufficient antecedent basis for the limitation "the zero position" in lines 10-11 of claim 9. There is insufficient antecedent basis for the limitation "the rinsing liquid intake pipe" in line 13 of claim 14.

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The term "parallel outlet" in claim 15 is a relative term which renders the claim indefinite. The term "parallel outlet" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The claim does not define the structure relative to which the "outlet" is parallel, and thus the exact orientation and configuration of said outlet is not clearly identified.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claims 1-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Paatzsch et al. (US Patent 3,666,420) in view of Melet (US Patent 6,555,065) and Phelan (US Patent 3,800,984).

Regarding claim 1, Paatzsch et al. teaches an apparatus for automatically carrying out chemical analyses comprising two pumps (Col. 4, ln 2-3 & Col. 4, ln 25) with pistons (see Drawing). Paatzsch et al. also teach a piston-driving stepping motor (Col. 4, ln 9), two successive electrovalves (Col. 4, lns 20-21 & lns 27-28), a suction nozzle (i.e., drawing-off means) (Col. 4, ln 4), and a pump control for controlling the suction and dispensing actions of the two pumps (Col. 4, lns 60-63). A tubing line (see Drawing, #16) connects the dosing pump and one of the electrovalves to an intake line which is connected to the suction nozzle drawing-off means. The pump having larger working chamber is connected to the tubing line at a point between the two valves (see Drawing, #20). The tubing line also connects to a pipe portion extending downwardly into a wash fluid (Col. 4, lns 20-25).

Paatzsch et al. do not specifically disclose a third electrovalve or a common rotating motorization for driving the rod/piston units of the pumps.

Melet discloses an automatic hematologic counting and analyzing device which employs a motor-driven metering piston/pump system designed to draw and dispense metered volumes of fluids. Melet utilizes a plurality of electrovalves to automatically open and close pipelines to

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fluid flow (see Abstract; see also Fig. 1). Specifically, Melet teaches the provision of an electrovalve (EV15) between the metering pump system and the sampling needle to control fluid flow to and from the sampling needle (Col. 3, lns 2-6).

Phelan discloses an automatic sampler and diluter apparatus similar to that of Paatzsch et al. which comprises two motor-driven metering pumps. Note, the following discussion relies upon both the disclosure and the drawing in Fig. 1 of the patent to Phelan. The pistons (#24, #26) of the two pumps extend axially into the pump chambers (#16, #18), and are connected by coupled via connecting rods (#28, #30) and crank pins (#32, #34) on cams (#36, #38) carried by a shaft (#40) driven by a motor (#42).

It would have been obvious to one of ordinary skill in the art to provide the apparatus of Paatzsch et al. with a valve such as the electrovalve EV15 of Melet, in order to allow for the regulation of fluid flow through the drawing-off means for sample-taking and dispensing. Also, it would have been obvious to drive the pump pistons of Paatzsch et al. using the common motorization mechanism like the one taught by Phelan, in order to provide a common motorization that will synchronize piston movement.

Note, the claim to the "successive phases" of the specific "suction sequence" has not been given patentable weight in the instant case. Since no additional structural limitations are indicated, it is concluded that the structural limitations disclosed by Paatzsch/Melet/Phelan et al. as discussed above are, in combination, fully capable of achieving the desired functionality recited in claim 1. Specifically, the electrovalves as discussed above are capable, by definition, of being in the "open" or "closed" positions as per the "suction sequence" comprised of the "successive phases" as defined in claim 1.

Similarly, the limitations given in claims 2-9 have not been given patentable weight, since no additional structural limitations are indicated. Again, it is concluded that the structural limitations disclosed by Paatzsch/Melet/Phelan as applied to claim 1 above are, in combination, fully capable of functioning as recited in claims 2-9.

8. **Claims 10 and 12-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Paatzsch/Melet/Phelan et al. (referred to as “the primary references”) as applied to claim 1 above, and further in view of Goldsmith (US Patent 3,572,130).

The primary references fail to teach block or modular construction of the pumping system. The primary references also do not teach pump units having conical upper extremities.

Regarding claim 10, Goldsmith discloses a device for liquid sample pick-up and dispensing having two pumps with different pumping chamber volumes (Col. 3, lns 45-48) wherein the cylindrical cavities of the pumping units are embodied within a material block (see Figs. 1 & 2).

It would have been obvious to modify the pump units of Paatzsch/Melet/Phelan with the block embodiment taught by Goldsmith, because providing the pumping units in block units would allow for a streamlined modular construction of the apparatus of Paatzsch/Melet/Phelan. Furthermore, the thick walls of the block pumping units taught by Goldsmith offer reinforced stability for the piston/rod pumping units.

Regarding claims 12-13, the upper portions of the pumping chambers (Fig. 2, #14 & #16) are conical in shape, and the conical portion of the smallest pumping chamber communicates directly with the pipe connected to the sample tube. Note that the Courts have held that absent

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persuasive evidence that a particular configuration is significant, shape/configuration is a matter of choice and therefore a change in shape would be obvious to a person of ordinary skill in the art. See *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Regarding claims 14-15, Goldsmith teaches modular construction of the pumping units. The pumping units have parallel faces (see Fig. 2) and pipes in communication with the cylindrical pumping chambers of the two pumping units.

It would have been obvious to a person of ordinary skill in the art to modify the pumping units of Paatzsch/Melet/Phelan with the modular units taught by Goldsmith, because doing so would allow for convenient repair or cleaning of individual pumping units.

9. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Paatzsch/Melet/Phelan et al. (referred to as “the primary references”) as applied to claim 1 above, and further in view of Hennessy et al. (US Patent 4,729,876).

The primary references do not teach a pinion and rack gear drive mechanisms.

Hennessy et al. teach a motor-driven syringe mechanism including rack and pinion gearing driven by a motor.

It would have been obvious to one of ordinary skill in the art to utilize the well-known drive means taught by Hennessy et al., in the apparatus of Paatzsch/Melet/Phelan, because doing so would provide a drive means that is not complicated and is operator-friendly.

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10. **Claims 16-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Paatzsch/Melet/Phelan et al. (referred to as “the primary references”) as applied to claim 1 above, and further in view of Richards et al. (US Patent 6,405,609).

The primary references do not teach the control of piston position based on optical-sensor derived rod/piston position.

Richards et al. teaches a system for aspirating and dispensing fluids which includes a motor driven syringe pump controlled by a microcomputer. An optical sensor is employed to indicate the position of the syringe plunger. The microcomputer controller receives plunger position information from the optical sensor.

It would have been obvious to one of ordinary skill in the art to modify the apparatus of Paatzsch/Melet/Phelan with the optical sensor taught by Richards, because providing the optical sensor would allow for accurate indication of the plunger position during automated fluid suction/metering.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cedric Chan whose telephone number is (571)270-3721. The examiner can normally be reached on Monday-Thursday 8:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on (571) 272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C.C./

06 December 2007

/Michael Kornakov/

Supervisory Patent Examiner, Art Unit 4151